WHAT IS CLAIMED IS:

Sub A'

1. An apparatus for performing segmentation-based enhancements of a video image, said apparatus comprising:

an input buffer for storing video frames of an incoming video signal;

a segmentation controller capable of segmenting a first stored frame into a plurality of segments, each of said plurality of segments comprising a plurality of pixels having at least one common property;

an image processor capable of calculating a probability function associated with at least one pixel in said first stored frame, said probability function indicating a probability that said at least one pixel belongs within a first selected one of said plurality of segments; and

an enhancement controller capable of enhancing a parameter of said at least one pixel as a function of said probability function of said at least one pixel.

2. The apparatus as set forth in Claim 1 wherein said segmentation controller segments said first stored frame into said

plurality of segments as a function of said probability function.

3. The apparatus as set forth in Claim 2 wherein said enhancement controller increases an amount of enhancement of said parameter as a value of said probability function increases.

4. The apparatus as set forth in Claim 3 wherein said enhancement controller decreases an amount of enhancement of said parameter as a value of said probability function decreases.

A1 cont'd

5. The apparatus as set forth in Claim 1 further comprising a memory capable of storing a segmentation algorithm, said segmentation algorithm comprising instructions executable by said segmentation controller for segmenting said first stored frame into said plurality of segments.

A1 cont'd

6. The apparatus as set forth in Claim 5 wherein said memory is further capable of storing an enhancement algorithm, said enhancement algorithm comprising instructions executable by said enhancement controller for enhancing said parameter of said at least one pixel.

7. The apparatus as set forth in Claim 1 wherein said probability function associated with at least one pixel is calculated from the (y,u,v) color values associated with said at least one pixel.

8. A television receiver comprising:

demodulation circuitry capable of receiving an incoming RF television signal and generating therefrom a baseband video signal capable of being displayed as a plurality of pixels on a video display; and

post processing circuitry, coupled to an output of said demodulation circuitry and receiving therefrom said baseband video signal, capable of performing segmentation-based enhancements of a video image, said post processing circuitry comprising:

an input buffer for storing video frames of an incoming video signal;

a segmentation controller capable of segmenting a first stored frame into a plurality of segments, each of said plurality of segments comprising a plurality of pixels having at least one common property;

an image processor capable of calculating a probability function associated with at least one pixel in said first stored frame, said probability function indicating a probability that said at least one pixel belongs within a first selected one of said plurality of segments; and

an enhancement controller capable of enhancing a parameter of said at least one pixel as a function of said

probability function of said at least one pixel.

9. The television receiver as set forth in Claim 8 wherein said segmentation controller segments said first stored frame into said plurality of segments as a function of said probability function.

10. The television receiver as set forth in Claim 9 wherein said enhancement controller increases an amount of enhancement of said parameter as a value of said probability function increases.

11. The television receiver as set forth in Claim 10 wherein said enhancement controller decreases an amount of enhancement of said parameter as a value of said probability function decreases.

12. The television receiver as set forth in Claim 8 further comprising a memory capable of storing a segmentation algorithm, said segmentation algorithm comprising instructions executable by said segmentation controller for segmenting said first stored frame into said plurality of segments.

A' cont'd

13. The television receiver as set forth in Claim 12 wherein said memory is further capable of storing an enhancement algorithm, said enhancement algorithm comprising instructions executable by said enhancement controller for enhancing said parameter of said at least one pixel.

14. The television receiver as set forth in Claim 8 wherein said probability function associated with at least one pixel is calculated from the (y,u,v) color values associated with said at least one pixel.

15. A method of performing segmentation-based enhancements of a video image comprising the steps of:

storing video frames of an incoming video signal in an input buffer;

segmenting a first stored frame into a plurality of segments, each of the plurality of segments comprising a plurality of pixels having at least one common property;

calculating a probability function associated with at least one pixel in the first stored frame, the probability function indicating a probability that the at least one pixel belongs within a first selected one of the plurality of segments; and

enhancing a parameter of the at least one pixel as a function of the probability function of the at least one pixel.

16. The method as set forth in Claim 15 wherein the step of segmenting segments the first stored frame into the plurality of segments as a function of the probability function.

17. The method as set forth in Claim 16 wherein the step of enhancing increases an amount of enhancement of the parameter as a value of the probability function increases.

A1 cont'd

18. The method as set forth in Claim 17 wherein the step of enhancing decreases an amount of enhancement of the parameter as a value of the probability function decreases.

19. Computer-executable instructions stored on a computer-readable storage medium and capable of performing segmentation-based enhancements of a video image, the computer-executable instructions comprising the steps of:

storing video frames of an incoming video signal in an input buffer;

A' cont'd

segmenting a first stored frame into a plurality of segments, each of the plurality of segments comprising a plurality of pixels having at least one common property;

calculating a probability function associated with at least one pixel in the first stored frame, the probability function indicating a probability that the at least one pixel belongs within a first selected one of the plurality of segments; and

enhancing a parameter of the at least one pixel as a function of the probability function of the at least one pixel.

20. The computer-executable instructions stored on a computer-readable storage medium as set forth in Claim 19 wherein the step of segmenting segments the first stored frame into the plurality of segments as a function of the probability function.

A' Cancel.

21. The computer-executable instructions stored on a computer-readable storage medium as set forth in Claim 20 wherein the step of enhancing increases an amount of enhancement of the parameter as a value of the probability function increases.